DETAILED ACTION

Response to Arguments

As to applicants arguments regarding ISO'14496 and Peng.

1. The examiner respectfully disagrees. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art to combine the teachings of 14496 with the teachings of Peng to provide a system and method for efficiently scaling a motion compensation system within a decoder while maintaining an acceptable level of output quality ([0018]).

2. Applicant's arguments with respect to claim18, 22-24 have been considered but are moot in view of the new ground(s) of rejection.

Status of Claims

3. Claim 21 in the previous office action has been cancelled. Claims 18-26 are currently pending.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Information technology –Coding of audio-visual objects—Part 2: Visual ISO/IEC 14496-2 Second Edition 2001-12-01 (herein referenced as ISO'14496) in view of Winger et al., US-2004/0032907 and further in view of Tucker et al., US-5,903,313.

7. Regarding **claim 18**, 14496 teaches A motion compensation method for generating a predictive image of a current macroblock with reference to a motion vector of a co-located macroblock that is included in a picture different from a current picture in which the current macroblock is included and that is co-located with the current macroblock, said motion compensation method comprising: when a co-located block is composed of a plurality of blocks for which motion compensation has been performed, the co-located block being co-located with a current block included in the current macroblock and being included in the co-located macroblock (7.6.9.5.1 Formation of motion vectors for the direct mode); and performing motion compensation for the current block to generate a predictive image of the current block, by using the obtained

motion vector (see section 3.114moiton compensation, and 7.6 Motion compensation decoding). ISO'14496 is silent in regards to obtaining a motion vector of a block located only in a corner of the co-located macroblock and judging whether a size of the obtained motion vector is within a predetermined range or not.

8. However, Winger teaches obtaining a motion vector of a block located only in the corner of the co-located macroblock (the present invention is directed to a method for reducing the size of bi-predicted frames in an MPEG video stream, the method comprising the steps of: a determining a corner block of a macroblock [0014]-[0015]. Further disclosed is in the present invention, the variables pic_block_x and pic-bloc_y take only the values 0 and 3, corresponding to the four corners of Fig. 4. Thus with the present invention, at most four different motion vectors are taken from the co-located macroblock, while with the old method up to sixteen different motion vectors could have been taken. The motion vector of block (0,0) is thus duplicated in blocks (0,1), (1,0) and (1,1) as indicated by arrows 92, 94 and 96 respectively. As a result the motion vectors for each block in a co-located macroblock become the motion vectors for a larger block in the current macroblock, in this case 4 larger blocks each being a 2.times.2 array of 4.times.4 pixel blocks ([0048] and fig. 4).

9. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Winger with ISO-14496 to improve the coding efficiency.

10. ISO'14496 (modified by Winger) is silent in regards to judging whether a size of the obtained motion vector is within a predetermined range or not; and performing

motion compensation for the current block to generate a predictive image of the current block, based on a result of said judging.

11. However, Tucker to judging whether a size of the obtained motion vector is within a predetermined range or not; and performing motion compensation for the current block to generate a predictive image of the current block, based on a result of said judging (The video processing system processes a compressed video data stream including a plurality of macroblocks of which some of the macroblocks have a motion vector associated therewith. The method includes the steps of selecting macroblocks in the compressed video data stream whose motion vectors exhibit a magnitude greater than a predetermined threshold value thus designating selected macroblocks. The method also includes the step of motion compensating the selected macroblocks whose motion vectors are greater than the predetermined threshold value. The remaining macroblocks whose motion vector or motion vectors do not exceed the threshold are not motion compensated, column 4 line 27-39, column 7 line 29-51, and fig. 3-4B).

12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Tucker with ISO'14496 (modified by Winger) for improved efficiency of motion compensation.

13. Regarding **claim 20,** ISO'14496 (modified by Winger and Tucker) teaches everything as claimed above, see claim 18. In addition, ISO'14496 teaches the motion compensation method according to claim 18, wherein a size of the current macroblock and the co-located macroblock is 16 pixels x 16 pixels, a size of the current block is 8 pixels x 8 pixels, and a size of each of the plurality of blocks which are included in the

co-located macroblock and for which motion compensation has been performed is 4 pixels x 4 pixels (7.6.5 Vector decoding processing and motion-compensation in progressive P-and S(GMC)-VOP and table 7- 6 -- 7-9).

14. Regarding **claim 22,** which recites a corresponding apparatus of the method for motion compensation, thus the analysis and rejection made in claims 18-20 and 26 also apply here because the motion compensation method in claims 18-20 and 26 would necessitate the need for an apparatus capable of providing the limitations of the apparatus in claim 22.

15. Regarding **claim 23,** the analysis and rejection made in claim 18-20 and 26 also apply here. ISO'14496 further teach the use of 14496 means that motion video can be manipulated as a form of computer data and can be stored on various storage means (see introduction). Hence, a computer program for executing the necessary steps corresponding to the method of claim 18-20 and 26 would have been inherent.

16. Regarding **claim 24,** see the rejection and analysis for claim 18, except this is a claim to an integrated circuit with the same limitations as claim 18.

17. Claim 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable Information technology –Coding of audio-visual objects—Part 2: Visual ISO/IEC 14496-2 Second Edition 2001-12-01 (herein referenced as ISO'14496) in view of Winger et al., US-2004/0032907 in view of Tucker et al., US-5,903,313 and further in view of Peng et al., US-2002/0172284A1.

18. Regarding **claim 19,** ISO'14496 (modified by Winger and Tucker) teaches everything as claimed above, see claim 19. In addition ISO'14496 teaches the motion

compensation method according to claim 18, wherein in said performing of the motion compensation, the predictive image of the current block is generated by setting the motion vector of the current block to "0" (7.6.9.6 Motion compensation in skipped macroblocks), a motion vector of the current block is determined using a motion vector of an adjacent macroblock which is located adjacent to the current macroblock, and the predictive image of the current block is generated by using the determined motion vector (3.114 motion compensation. 14496 discloses motion compensation for both forward and backward macroblocks. Furthermore, the macroblocks can representative of either the current macroblock . ISO'14496 is silent in regards to the motion vectors having a predetermined range. However, Peng teaches first scaling system 30 utilizes compare system 34 to compare the magnitude of each macroblock's motion vector to a predetermined threshold value 32 to determine how the macroblock should be processed. If the motion vector for a current macroblock is less than or equal to the predetermined threshold value 32, then the current macroblock is not decoded ([0031]).

19. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of 14496 (modified by Winger and Tucker) with the teachings of Peng to provide a system and method for efficiently scaling a motion compensation system within a decoder while maintaining an acceptable level of output quality ([0018]).

20. Regarding **claim 26,** ISo'14496 (modified by Winger, Tucker , and Peng) teaches everything as claimed above, see claim 19. In addition, 14496 further teaches the motion compensation method according to claim 19, wherein a size of the current macroblock and the co-located macroblocks is 16 pixels X 16 pixels, a size of the

current block is8 pixels X 8 pixels, and a size of each of the plurality of blocks which are included in the co-located macroblock and for which motion compensation has been performed (7.6.5 Vector decoding processing and motion compensation in progressive P and S(GMC)-VOP and table 7-4 -- 7-9).

21. Claim 25 is Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable Information technology –Coding of audio-visual objects—Part 2: Visual ISO/IEC 14496-2 Second Edition 2001-12-01 (herein referenced as ISO'14496) in view of Winger et al., US-2004/0032907 in view of Tucker et al., US-5,903,313 and further in view of Chen et al., US-7,190,724.

22. Regarding **claim 25,** ISO'14496 (modified by Winger and Tucker) teaches everything as claimed above, see claim 21. In addition, ISO'14496 teaches a mobile terminal comprising the integrated circuit according to claim 24 (the applications of ISCVIEC 14496 cover, but are not limited to, such areas as WMM. It is clear to the examiner that since the application of 14496 covers the area of wireless multimedia which is widely used within mobile devices, which would necessitate the use of a mobile terminal. See introduction). However, 14496 does not explicitly disclose a mobile terminal, Chen discloses the access of video on mobile terminals ([0005]).

23. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of 14496 (modified by Winger and Tucker) with the teachings of Chen for providing a method and apparatus for implementing efficient memory compression methods ([0003]).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA ROBERTS whose telephone number is (571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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